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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,138	07/25/2003	Ryoji Suzuki	9792909-5648	3927

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EXAMINER

TRAN, NHAN T

ART UNIT PAPER NUMBER

2622

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/627,138	Applicant(s) SUZUKI ET AL.	
	Examiner Nhan T. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/134,153.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of JAPAN P09-220264 has been filed in parent Application No. 09/134,153, filed on 8/14/1998.
2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in JAPAN on 2/14/1998. It is noted, however, that applicant has not filed a certified copy of the JAPAN P10-022867 application as required by 35 U.S.C. 119(b).

### ***Drawings***

3. Figure 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Response to Preliminary Amendments***

4. Preliminary amendments to title and related application data of specification filed 7/25/2003 are acknowledged and accepted. By preliminary amendments, claims 1-26 have been canceled and claim 27 has been added. Accordingly, claim 27 is currently pending.

### ***Claim Objections***

5. Claim 27 is objected to because of the following informalities:

Claim 27 recites the limitations “a photoelectric conversion element for **amplifying** incident light into an electric signal charge” in which the word “amplifying” is believed as a typo error to mean “converting” because the photoelectric conversion element defined by the applicant is a photodiode (12) that converts incident light into an electric signal charge (see whole applicant’s disclosure, specifically pages 5-7 and 10). It is clear in the applicant’s disclosure that the photoelectric conversion element does not perform any amplification of the incident light, it only converts the incident light into an electric signal charge. The “amplifying” is only performed by the amplifying element as clearly claimed and disclosed by the applicant’s specification. Thus, the word “amplifying” should be corrected to read as – converting – to comply with claim formalities and provide proper claim terminology in consistence with specification. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 27 contains the limitations of "said reset element is a **depression** type transistor." As disclosed in the entire specification (specifically on page 11, lines 5-7; page 17, lines 14-16 and page 18, lines 2-13), the reset element is a **depletion** type transistor. There is no original disclosure of "a depression type transistor" as a reset element.

### ***Double Patenting***

***(An Important note: This application is a voluntary division of the parent application No. 09/134,153 filed 8/14/1998, which is now US Patent No. 6,677,993. No restriction was made by the USPTO in the parent application. Thus, prohibition of double patenting rejections under 35 USC 121 does not apply. See MPEP 804.01.)***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29

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USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claim 27 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26 & 30 of U.S. Patent No. 6,677,993 B1 in view of Ogura Mototsugu (JP 57-172766).

All limitations of the instant claim 27 for a solid-state image sensor are broader in every aspect than the patent claims 26 & 30 except for the limitation "a depression type transistor." Note the Examiner's objection in section 5 in which the instant limitations "a photoelectric conversion element for **amplifying** incident light into an electric signal charge" is understood as "a photoelectric conversion element for **converting** incident light into an electric signal charge" which is met by the patent claim 26. The patent claim 30 further discloses the reset element as a *depletion* type transistor but fails to disclose that the reset element is a *depression* type transistor.

However, as taught by Ogura, a reset transistor (15), which is implemented by a *depression* type transistor, is provided in a solid-state image pickup device for resetting signal charges converted from an incident light. According to Ogura, it is possible to drive the image pickup device with a low voltage by using the depression type transistor as a reset transistor (see Ogura, abstract and Fig. 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a depression type transistor in place of depletion type transistor in the patent claim 30 to provide a low voltage operation for the solid-state image sensor as suggested by Ogura, thereby reducing power consumption of the image sensor.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 4,942,474) in view of Ogura Mototsugu (JP 57-172766).

Regarding claim 27, Wilder discloses a solid-state image sensor (Figs. 2 & 6-9; col. 10, lines 53-59) comprising:

a photoelectric conversion element (photodiode PD shown in Figs. 6-9) for [amplifying] converting incident light into an electric signal charge (see col. 10, lines 63-66);

an amplifying element (transistor Tout as an output amplifier, Fig. 6) for amplifying an electric signal from said photoelectric conversion element (see col. 14, lines 27-30);

a reset element (transistor TRGY) for resetting said photoelectric conversion element (see col. 14, line 38 – col. 15, line 11, note that the photodiode PD is reset to reference voltage VRD in a hard reset mode as shown in Figs. 8F – 8H), wherein said reset element is a depletion type transistor (see col. 13, lines 21-36).

Wilder discloses the depletion type transistor as the reset element having a low gate voltage (col. 13, lines 21-36) but does not explicitly disclose that the reset element is a depression type transistor. As taught by Ogura, a reset transistor (15), which is implemented by a depression type transistor, is provided in a solid-state image pickup device for resetting signal charges converted from an incident light. According to Ogura, it is possible to drive the image pickup device with a low voltage by using the depression type transistor as a reset transistor (see Ogura, abstract and Fig. 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an equivalent low-voltage depression type transistor in place of depletion type transistor in Wilder for resetting the photoelectric conversion element while maintaining a low voltage operation for reducing power consumption of the solid-state image sensor.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nt

NHAN T. TRAN  
Patent Examiner

A handwritten signature in black ink, appearing to read 'David Ometz', with a long horizontal flourish extending to the right.

DAVID OMETZ  
SUPERVISORY PATENT EXAMINER